

IN THE ABSTRACT:

Delete the abstract now of record and insert therefor the new abstract submitted herewith on a separate sheet.

REMARKS

In the last Office Action, the Examiner withdrew claims 2-4 and 7-8 from further consideration as being directed to non-elected species. Claim 6 was rejected under 35 U.S.C. §112, second paragraph, for indefiniteness. Claims 1, 5 and 6 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,032,370 to Nagashima et al. ("Nagashima '370"). Claims 1, 5 and 6 were further rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,636,444 to Nickel. Additional art was cited of interest.

In accordance with the present response, the specification has been suitably revised to correct informalities. Original independent claim 1 has been amended to further patentably distinguish from the prior art of record. Original claims 1, 5 and 6 have also been amended in formal respects to improve the wording thereof and to overcome the indefiniteness rejection (claim 6). Claims 2-4, 7 and 8, which are directed to non-elected species, have been amended to bring them into better conformance with U.S. practice and

are being retained in this application pending possible withdrawal of the restriction requirement or allowance of a generic or sub-generic claim. New claims 9-20 have been added to provide a fuller scope of coverage. A new abstract which more clearly reflects the invention to which the amended and new claims are directed has been substituted for the original abstract.

In view of the foregoing, applicants respectfully submit that the rejection of claim 6 under 35 U.S.C. §112, second paragraph, has been overcome and should be withdrawn. Moreover, applicants respectfully submit that amended independent claim 1 is generic to the elected species of Figs. 22-24, 25-31 (Species D) and the non-elected species of Figs. 1-13 (Species A) and Fig. 32 (Species E).

Applicants respectfully request reconsideration of their application in light of the following discussion.

#### Brief Summary of the Invention

The present invention is directed to a bush cutting machine.

Conventional bush cutting machines include a throttle adjustment unit mounted in a prime mover for adjusting the rotational speed of a cutter blade, and a brake unit provided in a drive power transmission path between the cutter blade and the prime mover for applying a braking force

to the cutter blade. In one conventional bush cutting machine, the cutter blade is connected to the prime mover via a clutch and a driven shaft, and a handle supports a brake lever connected via a wire to a brake shoe of the brake unit. When the brake lever is released from a gripped state, the brake shoe is urged against an outer circumferential periphery of the driven shaft to apply the brakes to the cutter blade.

However, in the foregoing conventional bush cutting machine, an operator is required to perform respective operations of the throttle lever and the brake lever in a timed fashion during a bush cutting operation. For example, the operator must operate the throttle lever in such a manner so as to gradually increase the rotational speed of the cutter blade while gripping the brake lever to gradually release the brakes from the cutter blade, thereby requiring high-skill operation of the levers. Furthermore, since the operator needs not only to perform a lever operation with his hand but also to maintain a specific orientation of the bush cutting machine during a cutting operation, the levers must be desirably operated in the simplest way possible in order to improve workability and minimize fatigue to the operator.

In another conventional bush cutting machine, a cutter blade is connected to the prime mover via a rotary shaft, a handle rod is mounted to an operation rod through which the rotary shaft passes, a brake lever and a throttle

lever are both mounted to the handle rod, a brake lever is connected via a wire to a brake section for braking the cutter blade, a throttle lever is connected to a throttle valve mechanism via a wire, and a control box is provided midway of the wires for linking the wires to one another. The control box includes a control body rotatably secured to a pivot shaft. The wires are connected to respective ends of the control body. In this bush cutting machine, the brake section and the throttle valve mechanism are interlinked through operation of the brake lever. However, the presence of the control box provided midway of the wires complicates the assembly of the control box and the wires. Furthermore, an outer tube disposed between the control box and the throttle lever is subjected to expansion and contraction deformation during operation of the throttle lever. As a result, the outer tube interferes with operation of the bush cutting machine. Moreover, the control box has various components which increase the overall number of parts, and therefore the manufacturing cost, of the bush cutting machine.

The present invention overcomes the drawbacks of the conventional art. Figs. 22-24 and 25-31 show a bush cutting machine 220 according to the present invention embodied in the claims. The bush cutting machine 220 has an operation rod 24 having a front end and a rear end. A cutter blade 22 is mounted to the front end of the operation rod 24 for

undergoing rotation. A prime mover (e.g., engine) 21 is mounted to the rear end of the operation rod 24 for rotationally driving the cutter blade 22. A throttle lever 332 is pivotally mounted with respect to the operation rod 24 for controlling an opening degree of a throttle valve of the prime mover 21 to adjust a rotational speed of the cutter blade 22. A brake unit 65 is provided for stopping rotation of the cutter blade 22. A main wire 338 has a first end portion 338b connected to the throttle lever 332 and a second end portion 338a. A throttle wire 343b has a first end portion connected to the throttle valve of the prime mover 21 and a second end portion 343c. A brake wire 344b has a first end portion connected to the brake unit 65 and a second end portion 344c. A link mechanism is actuated by operation of the throttle lever 332 to adjust the degree of opening of the throttle valve of the prime mover 21 and to release the brake unit 65 from a braking condition. The link mechanism includes a relay member 345 having a first lug portion 345a connected to the second end portion 338a of the main wire 338 and a second lug portion 345b connected to the second end portion 343c of the throttle wire 343b and the second end portion 344c of the brake wire 344b.

By the foregoing simplified construction of the bush cutting machine according to the present invention, control of an opening degree of the throttle valve of the prime mover to

adjust the rotational speed of the cutter blade and the application of brakes to stop rotation of the cutter blade are accomplished with high efficiency and a minimum number of parts as compared to conventional bush cutting machines.

**Traversal of Prior Art Rejections**

Claims 1, 5 and 6 were rejected under 35 U.S.C. §102(e) as being anticipated by Nagashima '370. Applicants respectfully traverse this rejection and submit that amended claims 1, 5 and 6 recite subject matter which is not identically disclosed or described in Nagashima '370.

Amended independent claim 1 is directed to a bush cutting machine and requires an operation rod having a front end and a rear end, a cutter blade mounted to the front end of the operation rod for undergoing rotation, a prime mover mounted to the rear end of the operation rod for rotationally driving the cutter blade, a throttle lever pivotally mounted with respect to the operation rod for controlling an opening degree of a throttle valve of the prime mover to adjust a rotational speed of the cutter blade, and a brake unit for stopping rotation of the cutter blade. Amended independent claim 1 further requires a main wire having a first end connected to the throttle lever, a throttle wire having a first end connected to the throttle valve of the prime mover, and a brake wire having a first end connected to the brake

unit. Amended independent claim 1 further requires a link mechanism actuated by operation of the throttle lever to adjust the degree of opening of the throttle valve of the prime mover and to release the brake unit from a braking condition, the link mechanism having a relay member having a first lug portion connected to the second end of the main wire and a second lug portion connected to the second end of the throttle wire and the second end of the brake wire. No corresponding structural combination is disclosed or described by Nagashima '370.

Nagashima '370 discloses a portable trimmer having an engine 4 connected to a control lever 14 via a throttle cable 20 (Figs. 1-6). A braking device 16, 16', 50 is connected to the control lever 14 via brake cable 18 so that the braking device is interlocked with the power control of the engine 4. The control lever 14 has a first take-up reel portion 70 and a second take-up reel portion 74 concentric with the first take-up reel portion 70 and having a radius  $R$  larger than a radius  $r$  of the first take-up reel portion 70. The first take-up reel portion 70 is connected to a brake wire 19 of the brake cable 18. The second take-up reel portion 74 is connected to a throttle wire 72 of the throttle cable 20.

In Nagashima, the function of the first and second take-up reel portions 70, 74 corresponds to the function of the link mechanism recited in independent claim 1. However,

the take-up reel portions in Nagashima clearly do not have the following specific structure of the link mechanism recited in amended independent claim 1: a relay member having a first lug portion connected to the second end of the main wire and a second lug portion connected to the second end of the throttle wire and the second end of the brake wire. In the absence of the foregoing disclosure recited in amended independent claim 1, anticipation cannot be found. See, e.g., W.L. Gore & Associates v. Garlock, Inc., 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984) ("Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration"); Continental Can Co. USA v. Monsanto Co., 20 USPQ2d 1746, 1748 (Fed. Cir. 1991) ("When more than one reference is required to establish unpatentability of the claimed invention anticipation under § 102 can not be found."); Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 221 USPQ 481, 485 (Fed. Cir. 1984) (emphasis added) ("Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim").

Stated otherwise, there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. This standard is clearly not satisfied by Nagashima '370 for the reasons stated above. Furthermore,

Nagashima '370 does not suggest the claimed subject matter and, therefore, would not have motivated one skilled in the art to modify Nagashima '370's portable trimmer to arrive at the claimed invention.

Claims 5 and 6 depend on and contain all of the limitations of amended independent claim 1 and, therefore, distinguish from the references at least in the same manner as claim 1.

Moreover, there are separate grounds for patentability of amended dependent claims 5 and 6.

With reference to the embodiment shown in Fig. 22, amended claim 5 includes the additional limitation that the bush cutting machine further comprises a handle 331 mounted on the operation rod 24 and an operating lever unit 314 mounted on the handle 331 and serving as a grip of the handle, and that the link mechanism (e.g., relay member 345) is disposed in the operating lever unit 314. No corresponding structural combination is disclosed or suggested by Nagashima '370.

Amended claim 6 includes the additional limitation that the link mechanism has a delay mechanism actuated by operation of the throttle lever such that the throttle valve opens with a time delay upon release of the brake unit from the braking condition. Nagashima '380 clearly does not disclose or suggest a delay mechanism as recited in claim 6. Additionally, in Nagashima '370 the take-up reel portions do

not perform the function corresponding to the function of the delay mechanism recited in claim 6.

In view of the foregoing, applicants respectfully request that the rejection of claims 1, 5 and 6 under 35 U.S.C. §102(e) as being anticipated by Nagashima '370 be withdrawn.

Claims 1, 5 and 6 were rejected under 35 U.S.C. §102(b) as being anticipated by Nickel. Applicants respectfully traverse this rejection and submit that amended claims 1, 5 and 6 recite subject matter which is not identically disclosed or described in Nickel.

Amended independent claim 1 is directed to a bush cutting machine as set forth above for the rejection of claims 1, 5 and 6 under 35 U.S.C. §102(e) as being anticipated by Nagashima '370.

Nickel discloses a cutting device having a cutter, a driving device for rotationally driving the cutter, a braking device for stopping rotation of the cutter, and a delay mechanism for the braking device. However, Nickel does not disclose or describe the specific structural combination of the main wire, throttle wire, and brake wire recited in amended independent claim 1. Nickel also does not disclose or suggest the specific structure and function of the link mechanism recited in amended independent claim 1. Since Nickel does not disclose or describe the foregoing structure

of the bush cutting machine recited in amended independent claim 1, there can be no anticipation by Nickel of amended independent claim 1 under 35 U.S.C. §102(b). That is, since each and every limitation of amended independent claim 1 is not found in Nickel, the reference does not anticipate the claimed invention. See In re Lange, 209 USPQ 288, 293 (CCPA 1981). Furthermore, Nickel does not suggest the claimed subject matter and, therefore, would not have motivated one skilled in the art to modify Nickel's cutting device to arrive at the claimed invention.

Claims 5 and 6 depend on and contain all of the limitations of amended independent claim 1 and, therefore, distinguish from the references at least in the same manner as claim 1.

Moreover, there are separate grounds for patentability of amended dependent claim 5.

Amended claim 5 includes the additional limitation that the bush cutting machine further comprises a handle mounted on the operation rod and an operating lever unit mounted on the handle and serving as a grip of the handle, and that the link mechanism (e.g., relay member) is disposed in the operating lever unit. No corresponding structural combination is disclosed or suggested by Nickel.

In view of the foregoing, applicants respectfully request that the rejection of claims 1, 5 and 6 under 35 U.S.C. §102(b) as being anticipated by Nickel be withdrawn.

Applicants respectfully submit that the prior art of record also does not disclose or suggest the subject matter recited in newly added claims 9-20.

Claims 9-12 depend on and contain all of the limitations of amended independent claim 1 and, therefore, distinguish from the references at least in the same manner as claim 1.

Moreover, there are separate grounds for patentability of new dependent claims 9-12.

Claims 9 and 10 include the additional limitation that the relay member is generally U-shaped (claim 9), and that the first and second lug portions form opposite and confronting leg portions of the generally U-shaped relay member (claim 10). No corresponding structure of the relay member is disclosed or suggested by the prior art of record.

Claim 11 includes the additional limitation that the relay member undergoes linear reciprocating movement in accordance with movement of the main wire, the throttle wire, and the brake wire. Again, this specific structure and corresponding function of the relay member is not disclosed or suggested by the prior art of record.

Claim 12 includes the additional limitation that the delay mechanism comprises the second ends of the throttle and brake wires connected to the second lug portion of the relay member so that when the throttle lever is not operated, the second end of the throttle wire is spaced from the second lug portion at distance greater than a space between the second end of the brake wire and the second lug portion. No corresponding features are disclosed or suggested by the prior art of record. For example, while Nickel discloses a delay mechanism for the braking device, such delay mechanism does not have the specific structure and corresponding function recited in claim 12.

New independent claim 13 is directed to a bush cutting machine and requires a prime mover having a throttle valve, a cutter blade rotationally driven by the prime mover, a transmission member for transmitting drive power from the prime mover to the cutter blade, a throttle lever for controlling an opening degree of the throttle valve of the prime mover to adjust a rotational speed of the cutter blade, a brake unit for stopping rotation of the cutter blade in a braking condition of the brake unit, and a relay member mounted to undergo movement by actuation of the throttle lever to adjust the opening degree of the throttle lever and to release the brake unit from the braking condition, the relay member having a first portion and a second portion disposed

opposite the first portion. Claim 13 further requires a first wire having a first end connected to the throttle lever and a second end connected to the first portion of the relay member, a second wire having a first end connected to the throttle valve of the prime mover and a second end connected to the second portion of the relay member, and a third wire having a first end connected to the brake unit and a second end connected to the second portion of the relay member. The prior art of record does not disclose or suggest the specific structural combination and corresponding functions of the first, second and third wires and the relay member recited in independent claim 13 as set forth above for amended independent claim 1.

Claims 14-20 depend on and contain all of the limitations of independent claim 13 and, therefore, distinguish from the references at least in the same manner as claim 13.

Moreover, there are separate grounds for patentability of new dependent claims 14-15, 16, 17-18, 19 and 20 set forth above for claims 9-10, 11, 5, 6 and 12, respectively.

In view of the foregoing amendments and discussion, the application is now believed to be in condition for allowance. Accordingly, favorable reconsideration and allowance of the claims are most respectfully requested.

Respectfully submitted,

ADAMS & WILKS  
Attorneys for Applicants

By: Bruce L. Adams  
Bruce L. Adams  
Reg. No. 25,386

50 Broadway  
31st Floor  
New York, NY 10004  
(212) 809-3700

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Bruce L. Adams

Name

S. Adams

Signature

September 5, 2003

Date